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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/761,391

01/22/2004

Masayuki Hirose

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22428

7590

09/29/2006

FOLEY AND LARDNER LLP
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EXAMINER

NORRIS, JEREMY C

ART UNIT

PAPER NUMBER

2841

DATE MAILED: 09/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,391

Applicant(s)

HIROSE, MASAYUKI

Examiner

Jeremy C. Norris

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/04, 1/05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by US 3,800,062 (Kataoka).

Kataoka discloses, referring primarily to figures 1 & 4, a superconducting cable comprising: a cable core having a superconducting conductor (2'); a thermal insulation pipe (5') accommodating the cable core, a forward path (3') of a coolant channel being formed in the thermal insulation pipe; and a coolant return pipe (5'') disposed beside the cable core in the thermal insulation pipe and functioning as a backward path of the coolant channel [claim 1], wherein a coolant inlet (near 17, figure 1) for supplying a coolant into the thermal insulation pipe is disposed at one end of the thermal insulation pipe; near the coolant inlet (leftmost reference 9', figure 1), one end of the coolant return pipe opens to the outside of the thermal insulation pipe; and at other end of the thermal insulation pipe, the other end of coolant return pipe communicates to the inside of the thermal insulation pipe (rightmost reference 9', figure 1, col. 4, lines 5-20) [claim

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3], wherein a coolant inlet for supplying a coolant to the coolant channel is disposed at one end of the thermal insulation pipe (near reference 17), and a coolant outlet (rightmost reference 9') for taking out the coolant from inside the thermal insulation pipe is disposed at the other end of the thermal insulation pipe; and wherein near the coolant inlet, one end of the coolant return pipe opens to the outside of the thermal insulation pipe (leftmost reference 9'), and at the other end of the thermal insulation pipe, the other end of the coolant return pipe opens to the outside of the thermal insulation pipe such that the coolant outlet and the other end of the coolant return pipe are connected to communicate with each other (col. 3, line 60 – col. 4, line 15) [claim 5].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2, 4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka in view of US 3,749,811 (Bogner).

Kataoka discloses the claimed invention as described above except Kataoka does not specifically state that the coolant return pipe is a corrugated metal pipe [claim 2]. However, it is well known in the art to form coolant pipe of corrugated metal in superconducting cables as evidenced by Bogner (col. 4, lines 45-65 and col. 8, 50-65). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use a corrugated metal pipe as the coolant return pipe in the invention of Kataoka as is known in the art and evidenced by Bogner. The motivation for doing so would have been to add flexibility to the cable. Additionally, the modified invention of Kataoka teaches wherein a coolant inlet (near 17, figure 1) for supplying a coolant into the thermal insulation pipe is disposed at one end of the thermal insulation pipe; near the coolant inlet (leftmost reference 9', figure 1), one end of the coolant return pipe opens to the outside of the thermal insulation pipe; and at other end of the thermal insulation pipe, the other end of coolant return pipe communicates to the inside of the thermal insulation pipe (rightmost reference 9', figure 1, col. 4, lines 5-20) [claim 4], wherein a coolant inlet for supplying a coolant to the coolant channel is disposed at one end of the thermal insulation pipe (near reference 17), and a coolant outlet (rightmost reference 9') for taking out the coolant from inside the thermal insulation pipe is disposed at the other end of the thermal insulation pipe; and wherein near the coolant inlet, one end of the coolant return pipe opens to the outside of the thermal insulation pipe (leftmost reference 9'), and at the other end of the thermal insulation

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pipe, the other end of the coolant return pipe opens to the outside of the thermal insulation pipe such that the coolant outlet and the other end of the coolant return pipe are connected to communicate with each other (col. 3, line 60 – col. 4, line 15) [claim 6].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following documents disclose cooled superconductive cables:

US 3,780,205	Aupoix et al.,
US 3,986,341	DeHaan,
US 5,120,705	Davidson et al..

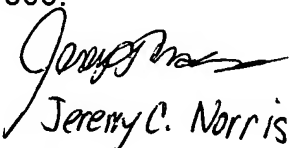
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday - Friday, 9:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCSN


Jeremy C. Norris
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